

REMARKS

This application was examined with claims 1 through 21. The Examiner rejected claims 1, 2, 5, 6 and 9 through 20 and object to claims 3 and 4. Claims 7, 8 and 21 were allowed. Applicants are amending claims 1 through 5, 7 through 9, 11, 12, 14 through 19 and 21. Claims 1 through 21 remain in the application.

Applicant requests reconsideration and reexamination of the above-identified application in view of the amendments made to the claims. The following remarks state Applicant's bases for making this request and are organized according to the Examiner's Action.

Examiner's Objections to Specification

The Examiner objects to claims 2, 4, 11 and 21 and cites a number of informalities. Applicants are amending the claims to incorporate the Examiner's suggested changes except with respect to the Examiner's suggestion at claim 21, line 15. The Examiner objects to "an" (first occurrence), stating it should be replaced with - said -. The term "an" is in the phrase "an image". Applicants are replacing "an image" with - the image - to be consistent with the use of that phrase in other portions of the claim.

Examiner's Action - Claim Rejections - 35 U.S.C. 112

The Examiner rejects claims 5, 6 and 9 through 20 under 35 U.S.C. §112, second paragraph. Applicants believe that the amendments made to the claims overcome these rejections.

Specifically, claim 5 is amended to change "said means" to "each of said support means" that has antecedent basis thereby to overcome the rejection of claims 5 and 6.

Claims 7 through 13 now define a lens set with an intermediate peripheral surface. Claim 9 is amended to make it clear that the lens set peripheral surface is cylindrical and that this is the same peripheral surface as set forth in claim 7. Thus this amendment should overcome the rejection of claims 9 through 13.

Applicants have amended claim 14 to refer to the "axis" with the indefinite article "an" and to amend the phrase "optical device" to "optical module" that has antecedent basis in the preamble of claim 14.

Claim 16 is amended in a manner corresponding to that of claim 9. Consequently Applicants believe that the amendments to claims 14 and 16 overcome the rejections to claims 14 through 20.

Examiner's Action - Claim Rejections - 35 U.S.C. 102

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by any of the following references:

5,757,559 - Nomura et al.

6,122,114 - Sudo et al.

5,557,474 - McCrary

6,108,145 - McCrary

5,177,641 - Kobayashi et al.

Applicants respectfully traverse these rejections.

With respect to the Nomura et al. reference, the Examiner argues that the optical element of claims 1 and 2 reads on lenses 10 and 20 and that the first and second support means read on elements 30 and 35, respectively. The Nomura et al. reference discloses a plastic lens 10 and a lens 20. If one construes the optical element in claim 1 as being the plastic lens 10, the lens frame 40 in Nomura et al. does not provide a "positive seat" for the optical element because the element 35 is a "elastic holding ring" that can deform. Secondly, the frame 30 does not engage both faces of the plastic lens 10. If one construes the optical element to be the glass lens 20 in Nomura et al., the frame 30 does not engage the face 21.

With respect to Sudo et al., the Examiner constitutes elements 1 and 2 as the claimed optical lens and elements 3 and 5 as the claimed support means. As Applicants understand the office action, the Examiner considers the combination of the lens 1 and the ring frame 2 to constitute "the optical element" and the lens barrel member 3 and radially extending leaf springs 5 to constitute the optical element support means.

Under that construction, Applicants respectfully submit the claim does not read on the Suda et al. reference because the leaf springs 5 can obviously flex so that the first and second support means do not lock the optical element in the optical device.

Both the McCrary references disclose a thermal compensation method and apparatus for use in lens systems. The Examiner argues that reference should be made to numerals 10B and 11 through 15 and 18, respectively. Whether the optical element is read on element 10B or on element 10A or the combination of elements 10A and 10B, Applicants respectfully submit that none of the structures disclosed in either of the McCrary references anticipate the optical device set forth in claim 1. Specifically, the element that engages the other face of the lens 10B in the McCrary reference is one of five annular spacers that are shaped and operate to provide the thermal compensation. Spacer 15 moves independently of the ring 18 and is therefore not integral with the ring 18. Applicants submit further that the second support means do not engage the first and second faces as that phrase is utilized in claim 1.

The Examiner argues that in the Kobayashi et al. reference the element 14 corresponds to the claimed optical element and the lens barrel 10 and elastic member 54 correspond to the first and second support means. While the shoulder 32 and the shoulder 54 in Kobayashi et al. prevent vertical lens motion and motion to the right in FIG. 1, the mechanism for locking

the optical element in the optical device is a combination of a ring 52 that is threaded onto the lens barrel 10, the second lens 12 and an annular elastic element 54 that lies intermediate the adjacent faces of the lenses. Consequently the second support means for lens 14 is not formed integrally with the first support means. Further, the spacer ring 54 is not integral with the ring 10.

Applicants therefore respectfully submit that claims 1 and 2 define a structure that is novel over each reference the Examiner has specified. Moreover, Applicants respectfully submit that the differences between the structures as defined in claims 1 and 2 and those defined in each of the references would not have been obvious to a person of ordinary skill in the art when the references are taken singly or in combination.

Examiner's Action - Allowable Subject Matter

Applicants note with appreciation that the Examiner has allowed claims 7, 8 and 21. Applicants further note with appreciation that claims 3 through 5, 9, 14 and 16 would be allowable if rewritten to overcome the rejection. Applicants believe that the clarifying amendments made to the various claims overcome those rejections.

Summary

Applicants have amended claims 1 through 5, 7 through 9, 11, 12, 14 through 19 and 21. Applicants respectfully submit

that the claims satisfy all the conditions for patentability. Consequently Applicants respectfully request the Examiner to reconsider the rejections made in the Office Action of October 4, 2006 by allowing claims 1 through 21.

If there are any questions, we urge the Examiner to call us collect.

Respectfully Submitted,

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